Homework Assignment #13
(due: Tuesday, December 7, 5 pm)

1. Expensive Rental: Taylor problem (15.6) (1P)

2. Decay of Pions:
2a. Taylor problem (15.8) (2P)
2b. Taylor problem (15.12) (2P)

3. Simultaneity: Taylor problem (15.17) (1P)

4. Boost Along y-Axis: Taylor problem (15.33) (2P)

5. Time-Like Vectors: Taylor problem (15.43) (1P)

6. Conservation of Total Momentum: Taylor problem (15.51) Hint: Read Carefully page 637. (2P)

7. Energy Constant: Taylor problem (15.66) Hint: Consider the momentum of a particle which is stationary in $S'$. (2P)

8. Particle Decay: Taylor problem (15.74) Hint: For part (a) make a sketch of the decay before and after the decay both in the frame $S$ and in the CM frame. What are the momenta and what are the energies in the CM frame? For part (b) use the velocity transformations. (2P)

Reading Assignment #34
(due: Friday, December 3, 8 am)

Read: Taylor §15.11 – §15.13

1a. How does one have to define momentum in special relativity to obtain conservation of total momentum?
1b. Which other conservation law does automatically follow from 1a.

2. Comments: What of this reading and last class did you find most difficult and/or what did you find most interesting? What would you like to be discussed on Friday in class?